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IS 13740 (1993): Carbide Tipped Single Point Tools - Technical Supply Conditions [PGD 32: Cutting tools]

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REAFFIRMED

- Nov 2003

IS 13740 : 1993
(Superseding IS 2163 : 1976)

भारतीय मानक

कार्बाइड टिपदार एक नोंक वाले औज़ार — तकनीकी पूर्ति शर्तें

Indian Standard

CARBIDE TIPPED SINGLE POINT TOOLS — TECHNICAL SUPPLY CONDITIONS

UDC 621·9·025·12 [669·018·25]

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

September 1993 **Price Group 4**

Single Point Cutting Tools, Carbide Tips and Indexable Inserts Sectional Committee, PE 12

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Single Point Cutting Tools, Carbide Tips and Indexable Inserts Sectional Committee had been approved by the Production Engineering Division Council.

Requirements of various types of carbide tips, carbide tipped tools for single point turning, planing tools, etc, both for ISO series and IND series were earlier covered in a number of Indian Standards. While considering revision of these Indian Standards based on the relevant International Standards, opportunity was taken to replace the earlier Indian Standards and publish various requirements of carbide tips and tools under different parts of a rational series of Indian Standards as follows:

IS 13740 Carbide tipped single point tools — Technical supply conditions
IS 13741 (Parts 1 to 7) Carbide tips
IS 13742 (Parts 1 to 9) Carbide tipped single point tools — ISO series
[1]IS 13743 (Parts 1 to 10) Carbide tipped single point tools — IND series
[1]IS 13744 (Parts 1 to 8) Carbide tipped single point planing tools

This standard has been revised based on present practices prevalent in Indian Industry and developments at International level. During the formulation of this standard, assistance has been derived from the following International Standards, issued by International Organization for Standardization (ISO):

ISO 243 : 1975 Turning tool with carbide tips — External tools
ISO 514 : 1975 Turning tool with carbide tips — Internal tools

This standard supersedes IS 2163 : 1976.

The committee responsible for the preparation of this standard is given at Annex B.

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[1] Under preparation.

AMENDMENT NO. 1 NOVEMBER 1998
TO
IS 13740 : 1993 CARBIDE TIPPED SINGLE POINT TOOLS — TECHNICAL SUPPLY CONDITIONS

(*Page* 1, *Fig.* 2, *Note*) — Substitute 'x = 1.0 mm *Max*' *for* 'x = 0.1 mm *Max*' *for* cutting edge length over 20 mm.

(*Page* 7, *Annex, Title*) — Substitute 'ANNEX B' *for* 'ANNEX A'.

(PE 12)

Reprography Unit, BIS, New Delhi, India

AMENDMENT NO. 2 MARCH 2002
TO
IS 13740 : 1993 CARBIDE TIPPED SINGLE POINT TOOLS — TECHNICAL SUPPLY CONDITIONS

(*Page* 1, *Fig.* 1) — Substitute the following for the existing figure:

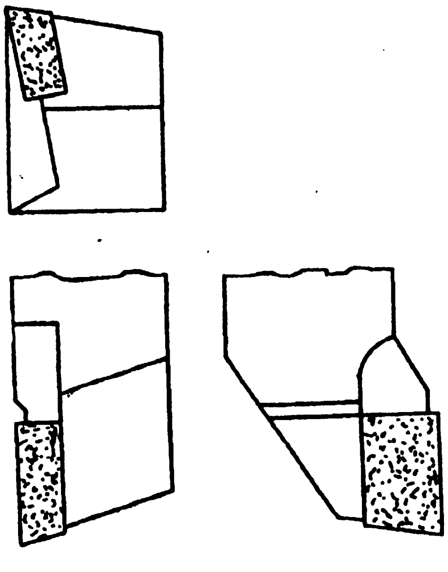


Fig. 1 Cranked Turning Tool ISO 6 with Tip Seating Milled in one Pass with Tip of Type C

(BP 12)

Reprography Unit, BIS, New Delhi, India

Indian Standard

CARBIDE TIPPED SINGLE POINT TOOLS— TECHNICAL SUPPLY CONDITIONS

1 SCOPE

This standard covers different types of carbide tipped single point tools and their general requirements.

2 REFERENCES

The Indian Standards given in Annex A are necessary adjuncts to this standard.

3 TYPES

A general survey of different types of single point tools covered in various Indian Standards is given in Table 1.

4 DIMENSIONS

4.1 The dimensional details of each type of tool are covered in the respective Indian Standards mentioned in the foreword to this standard.

4.2 The dimensions of carbide tips shall be in accordance with IS 13741 (Parts 1 to 7) : 1993.

5 MATERIAL

5.1 Shank

5.1.1 The material of the shanks for tools shall be of steel having a minimum tensile strength of 700 MPa.

5.2 Carbide Tip

5.2.1 The carbide tip shall be of a range of application suitable for the particular work piece material as specified by the purchaser according to IS 2428 : 1964.

6 GENERAL REQUIREMENTS

6.1 Unless otherwise specified, the tools shall be supplied with a rake angle of 10°.

6.2 At the discretion of the manufacturer, the tip seat for the tool may be milled parallel to the rake plane in one pass as shown in Fig. 1. The figure shows tool ISO 6 with tip seating milled in one pass and a carbide tip of type C.

6.3 The figures in the respective standards are indicative of dimensions only and do not specify design features.

6.4 Sections and designations of tool shanks shall be in accordance with IS 1983 : 1985.

6.5 The overhang of the tip shall be as shown in Fig. 2.

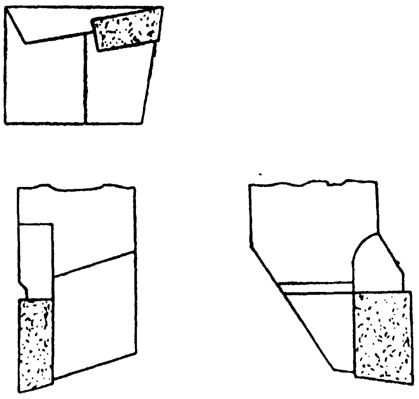
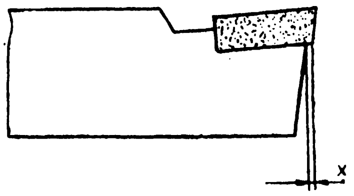


FIG. 1 CRANKED TURNING TOOL ISO 6 WITH TIP SEATING MILLED IN ONE PASS WITH TIP OF TYPE C



x = 0·5 mm *Max*, for cutting edge length up to and including 20 mm

x = 0·1 mm *Max*, for cutting edge length over 20 mm

FIG. 2 OVERHANG OF THE TIP

7 WORKMANSHIP AND FINISH

7.1 The tool shank shall be soundly forged and/or machined to shape.

7.2 The brazing of the carbide tip shall be sound.

7.3 The tools shall be free from burrs, rust, seams, cracks or any other manufacturing defects and shall be supplied well finished. The cutting edges shall be finished to a minimum depth of 1 mm from top of the cutting edge and the surface roughness of the cutting edge shall be N5.

8 PROTECTIVE COATING AND PACKAGING

8.1 The tools shall be covered by suitable rust proof material.

8.2 The cutting portion of the tool shall be protected against damage by a suitable coating.

The tool shall then be packed in boxes or containers for safe handling.

9 SAMPLING

The sampling and criteria of acceptance shall be in accordance with IS 7778 : 1975.

10 DESIGNATION

Designation of tools shall be as given in the respective Indian Standards.

11 MARKING

Marking of tools shall be as given in IS 10412 : 1983.

Table 1 General Plan of Carbide Tipped Single Point Tools

(*Clause* 3)

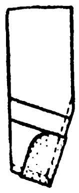
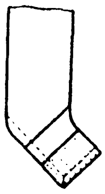
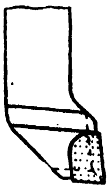
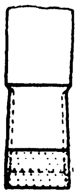
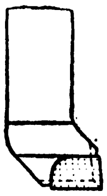
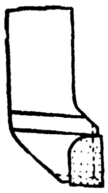
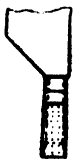
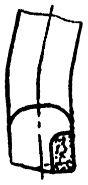
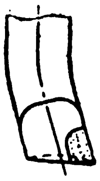
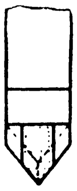
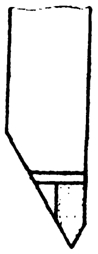
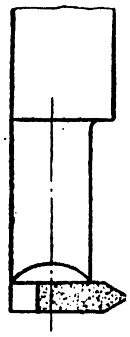
Designation	Figure	Covered in IS
Straight turning tool (ISO 1)		IS 13742 (Part 1)
Cranked turning and facing tool (ISO 2)		IS 13742 (Part 2)
Cranked finishing tool (ISO 3)		IS 13742 (Part 3)
Broad turning tool (ISO 4)		IS 13742 (Part 4)
Cranked facing tool (ISO 5)		IS 13742 (Part 5)
Cranked turning tool (ISO 6)		IS 13742 (Part 6)

Table 1 (*Continued*)

Designation	Figure	Covered in IS
Parting off tool (ISO 7)		IS 13742 (Part 7)
Boring tool (ISO 8)		IS 13742 (Part 8)
Boring and facing tool (ISO 9)		IS 13742 (Part 9)
Straight turning tool (IND 1)		[1]IS 13743 (Part 1)
External threading tool (IND 2)		[1]IS 13743 (Part 2)
Internal threading tool (IND 3)		[1]IS 13743 (Part 3)

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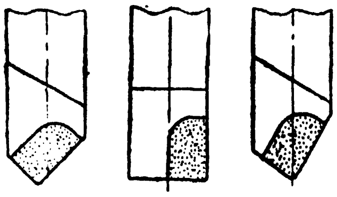
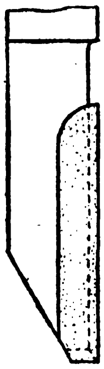
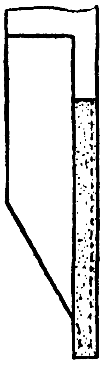
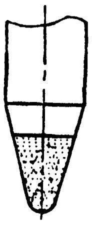
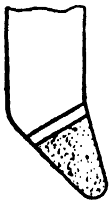
[1] Under preparation.

Table 1 (*Continued*)

Designation	Figure	Covered in IS
Boring tool (IND 4)		1)IS 13743 (Part 4)
Tool for sliding head automats — turning tool (IND 5)		1)IS 13743 (Part 5)
Tool for sliding head type automats parting off tool (IND 6)		1)IS 13743 (Part 6)
Straight round nose turning tool (IND 7)		1)IS 13743 (Part 7)
Cranked round nose turning tool (IND 8)		1)IS 13743 (Part 8)

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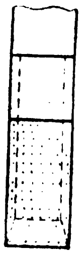
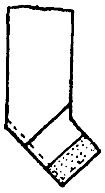
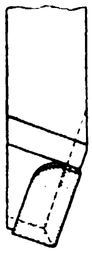
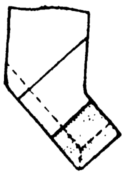
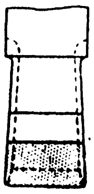
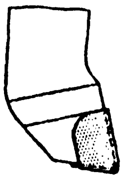
1)Under preparation.

Table 1 (*Continued*)

Designation	Figure	Covered in IS
Tool for sliding head type automats — Recessing tool (IND 9)		[1]IS 13743 (Part 9)
Cranked turning and facing tool (IND 10)		[1]IS 13743 (Part 10)
Straight planing tool (P 1)		[1]IS 13744 (Part 1)
Cranked planing tool (P 2)		[1]IS 13744 (Part 2)
Broad planing tool (P 3)		[1]IS 13744 (Part 3)
Cranked finishing tool (P 4)		[1]IS 13744 (Part 4)

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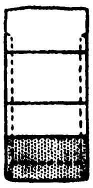
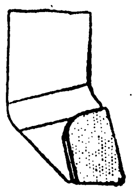
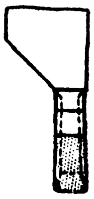
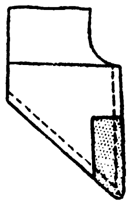
[1]Under preparation.

Table 1 (*Concluded*)

Designation	Figure	Covered in IS
Broad finishing tool (P 5)		[1]IS 13744 (Part 5)
Corner cutting planing tool (P 6)		[1]IS 13744 (Part 6)
Grooving tool (P 7)		[1]IS 13744 (Part 7)
Side-ways planing tool (P 8)		[1]IS 13744 (Part 8)

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[1] Under preparation.

ANNEX A

(*Clause* 2)

LIST OF REFERRED INDIAN STANDARDS

IS No.	*Title*
1983 : 1985 ISO 241 : 1975	Shank sections for single point turning and planing tools (*first revision*)
2428 : 1964	Application of carbides for machining, ranges of application and colour code
7778 : 1975	Method of sampling small tools
10412 : 1983	System of designation and marking of single point cutting tools with carbide tips
13741	Carbide tips:
(Part 1) : 1993	Carbide tips for single point tools
(Part 2) : 1993	Carbide tips for single point tools for light cutting operations
(Part 3) : 1993	Carbide tips for single point tool blanks for sliding head type automats
(Part 4) : 1993	Carbide tips for multi point tools
(Part 5) : 1993	Carbide tips for twist drills for point angle 115 deg
(Part 6) : 1993	Carbide tips for single point threading tools
(Part 7) : 1993	Carbide tips for single point round nose turning tools

ANNEX A

(*Foreword*)

COMMITTEE COMPOSITION

Single Point Cutting Tools, Carbide Tips and Indexable Inserts Sectional Committee, PE 12

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Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Handbook' and 'Standards Monthly Additions' Comments on this Indian Standard may be sent to BIS giving the following reference:

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Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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